

ABSTRACT OF THE DISCLOSURE

It is an object to provide a semiconductor device having an improved heat dissipation characteristic. A power element (1) is mounted on and jointed to a metal block (3) through a jointing material (9). An insulating substrate (4) consists of a ceramic substrate (6) and metal layers (5, 7) formed on both surfaces of the ceramic substrate (6) and having thicknesses equal to each other. The metal block (3) and the insulating substrate (4) are provided per insulation unit of the power element (1). The metal layer (5) of the insulating substrate (4) is joined to a surface of the metal block (3) through a jointing material (10) opposite to a surface thereof for forming the power element (1). An electrode terminal (2n) is attached to a surface of a metal block (3n) having a power element (1n) joined thereto through ultrasonic junction and the like. Electrode terminals (2b, 2c) are connected to electrodes of the power element (not shown) through aluminum wires (8). The power element (1), the electrode terminals (2b, 2c) and the metal block (3) are sealed with a resin package (11) while the metal layer (7) of the insulating substrate (4) remains exposed. An external heat dissipator (not shown) is attached to the exposed metal layer (7) of the insulating substrate (4).

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